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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/574,981	04/07/2006	Taketoshi Usui	10993.0270	7145

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EXAMINER	
MCCULLEY, MEGAN CASSANDRA	
ART UNIT	PAPER NUMBER
1796	

MAIL DATE	DELIVERY MODE
12/29/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/574,981	USUI ET AL.	
	Examiner	Art Unit	
	Megan McCulley	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 October 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,5 and 7-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,5 and 7-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

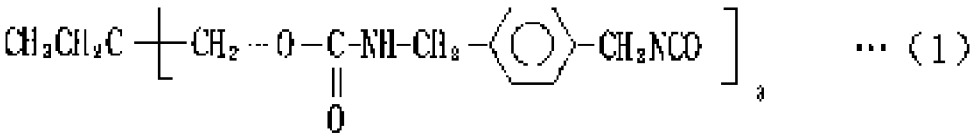
DETAILED ACTION

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 5, 7, 8, 18, 27-29 are rejected under 35 U.S.C. 102(b) as being anticipated by Hosokawa et al. (JP 2000-230032). The English language machine translation for the Japanese document is used for the citations below.

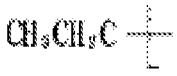
Regarding claims 1, 27-29: Hosokawa et al. teaches a curing agent for an epoxy resin (abstract) comprising a curing agent coated/core and shell curing agent obtained by reacting of an isocyanate (b1) of the formula:

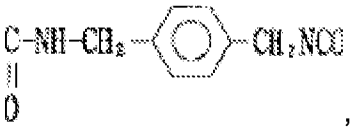


… (1)

(page 5 formula 4)

with an active hydrogen compound (b2)/water (pg. 9 para 36) and another isocyanate compound (page 2 formula 2) which is a polyisocyanate. The isocyanate of formula 1/(b1) has not less than three isocyanate groups and has a low molecular weight (676). Further, since it is a discreet molecule rather than a polymer, i.e. n=3, there is no molecular weight distribution. It is in an amount of 30-80% (page 5 end of para. 8) to the total amount of isocyanate compounds, which overlaps the claimed ranges. A polyurea is made by this reaction (page 9 para. 36) which would incorporate at least one nitrogen of the isocyanate. The polyurea would contain the two structures of the reactants/isocyanates that went into making the polyurea. The structures each contain three nitrogen atoms at a branching point via a linear aliphatic hydrocarbon group

 (see formula 1 above). Also the polyisocyanate has a structure of an aromatic hydrocarbon group bonded to no less than two nitrogen atoms

 , which would remain after the isocyanate reaction (see formula 1 above).

Regarding claim 5: A urea bond has a bonding absorbing infrared wavelength of 1630 to 1680 cm-1, as evidenced by the instant specification (para. 118 of publication).

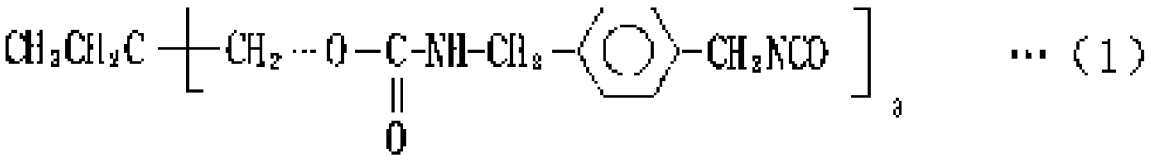
Regarding claim 7: Hosokawa et al. teach the core of the curing agent can be an amine (pg. 7 para. 24).

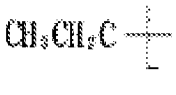
Regarding claim 8: While Hosokawa et al. does not directly teach that the glass transition temperature of the coating is 80 °C or less, since all of the components are present in the composition it is inherent that the composition would have these properties. If it is applicants' position that this would not be the case: (1) evidence would need to be presented to support applicants' position; and (2) it would be the Office's position that the application contains inadequate disclosure that there is no teaching as to how to obtain a composition with these properties.

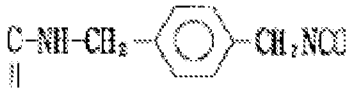
Regarding claim 18: Hosokawa et al. teaches 100 parts epoxy to 0.1-3 parts of the core-shell curing agent (abstract) which is equivalent to 3,300-100,000 parts epoxy for 100 parts core-shell curing agent and overlaps the claimed range.

Claim 17 is rejected under 35 U.S.C. 102(b) as being anticipated by Hosokawa et al. (JP 2000-230032). The English language machine translation for the Japanese document is used for the citations below.

Regarding claim 17: Hosokawa et al. teach coating/a shell-core curing agent for an epoxy resin (abstract) formed by reacting an isocyanate component of the formula:



(page 5 formula 4) which has not less than three isocyanate groups and has a low molecular weight (676). Further, since it is a discreet molecule rather than a polymer, i.e. n=3 always, there is no molecular weight distribution. This is reacted with an active hydrogen compound (b2)/water (pg. 9 para 36) and another isocyanate compound (page 2 formula 2) which is a polyisocyanate. It is in an amount of 30-80% (page 5 end of para. 8) of the isocyanates. A polyurea is made by this reaction (page 9 para. 36) which would incorporate at least one nitrogen of the isocyanate. The polyurea would contain the two structures of the reactants/isocyanates that went into making the polyurea. The structures each contain three nitrogen atoms at a branching point via a linear aliphatic hydrocarbon group  (see formula 1 above). Also the polyisocyanate has a structure of an aromatic hydrocarbon group bonded to no less

than two nitrogen atoms  , which would remain after the isocyanate reaction (see formula 1 above).

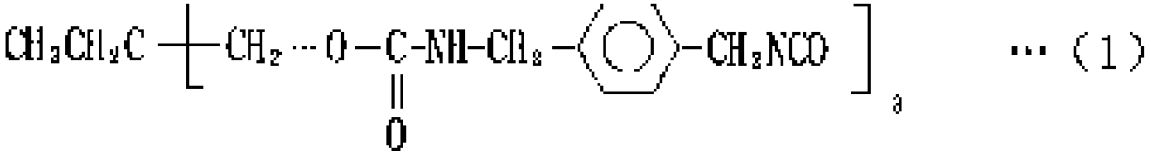
Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 9-16, 19-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishimura et al. in view of Hosokawa et al. (JP 2000-230032). The English language machine translation for the Japanese document is used for the citations below.

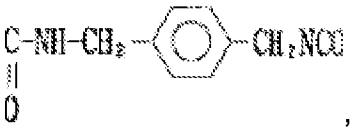
Regarding claims 1, 9: Ishimura et al. teaches a core shell curing agent obtained by reacting the curing agent and an epoxy resin (abstract).

Not disclosed is the particularly claimed curing agent. However, Hosokawa et al. a curing agent for an epoxy resin (abstract) comprising a curing agent coated/core and shell curing agent obtained by reacting of an isocyanate (b1) of the formula:

 ··· (1)

(page 5 formula 4) with an active hydrogen compound (b2)/water (pg. 9 para 36) and another isocyanate compound (page 2 formula 2) which is a polyisocyanate. The isocyanate of formula 1/(b1) has not less than three isocyanate groups and has a low molecular weight (676). Further, since it is a discreet molecule rather than a polymer, i.e. n=3,

there is no molecular weight distribution. It is in an amount of 30-80% (page 5 end of para. 8) to the total amount of isocyanate compounds, which overlaps the claimed ranges. A polyurea is made by this reaction (page 9 para. 36) which would incorporate at least one nitrogen of the isocyanate. The polyurea would contain the two structures of the reactants/isocyanates that went into making the polyurea. The structures each contain three nitrogen atoms at a branching point via a linear aliphatic hydrocarbon group  (see formula 1 above). Also the polyisocyanate has a structure of an aromatic hydrocarbon group bonded to no less than two nitrogen atoms

 , which would remain after the isocyanate reaction (see formula 1 above). Ishimura et al. and Hosokawa et al. are analogous art since they are both concerned with the same field of endeavor, namely core shell urea curing agents for epoxy resins. At the time of the invention a person having ordinary skill in the art would have found it obvious to combine the curing agent of Hosokawa et al. with the composition of Ishimura et al. and would have been motivated to do so for such desirable properties as control over the destructive temperature of the shell part and a semiconductor device excellent in solder-proof nature, as evidenced by Hosokawa et al. (page 5 para. 10).

Regarding claim 10: Ishimura et al. teaches a master batch curing agent comprising 100 parts by mass of the curing agent/hardener and 10-50,000 parts by mass of an epoxy resin (abstract).

Regarding claim 11: Ishimura et al. teaches 0.1 to 100 parts by weight of the hardener to 100 parts of an epoxy resin (page 9 lines 19-20).

Regarding claim 12: Ishimura et al. teaches the composition can be mixed with other curing agents such as acid anhydrides (page 9 lines 24-39). Example 13 has 100 parts by weight epoxy, 90 parts by weight acid anhydride and 10 parts by weight hardener (pg. 18), which overlaps the claimed ranges.

Regarding claims 13, 23: Ishimura et al. teaches using the compositions for IC chip sealing, which uses anisotropic conductive materials (pg. 10 lines 21-31).

Regarding claims 14, 24: Ishimura et al. teaches using the compositions for the bonding of printed circuit boards, which uses conductive adhesive materials (pg. 10 lines 21-31).

Regarding claims 15, 25: Ishimura et al. teaches using the compositions for bonding headlight devices, which uses insulating adhesive material (pg. 10 lines 21-31).

Regarding claims 16, 26: Ishimura et al. teaches using the compositions for sealing/encapsulating motor coils (pg. 10 lines 21-31).

Regarding claim 19: Ishimura et al. teaches 0.1 to 100 parts by weight of the hardener to 100 parts of an epoxy resin (page 9 lines 19-20).

Regarding claim 20: Ishimura et al. teaches 0.1 to 100 parts by weight of the masterbatch to 100 parts of an epoxy resin (page 9 lines 19-20).

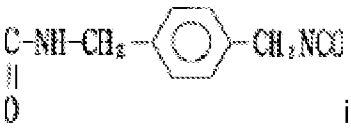
Regarding claims 21, 22: Ishimura et al. teaches the composition can be mixed with other curing agents such as acid anhydrides (page 9 lines 24-39). Example 13 has

100 parts by weight epoxy, 90 parts by weight acid anhydride and 10 parts by weight masterbatch (pg. 18), which overlaps the claimed ranges.

Response to Arguments

Applicant's arguments filed 10/26/2009 have been fully considered but they are not persuasive.

A) Applicant's argument that Hosokawa et al. does not teach structure (2), an aromatic hydrocarbon bonded to not less than two nitrogen atoms is not persuasive. As can be seen from formula (1) of Hosokawa et al., the structure



is in the formula and therefore in the resultant curing agent.

B) Applicant's argument that the resin coating according to the claimed invention is superior to the prior art is not persuasive. Secondary considerations cannot be used to overcome a 102 rejection (see MPEP 2131.04). As for the 103 rejection, comparison must be shown with the closest prior art, which is Hosokawa et al. (see MPEP 716.02 (e)).

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Megan McCulley whose telephone number is (571)270-3292. The examiner can normally be reached on Monday - Thursday 7:30-6:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on (571) 272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo/
Supervisory Patent Examiner, Art Unit 1796

/M. M./
Examiner, Art Unit 1796